

COVID-19 Bulletin

An RSB communication on the
bioscience behind the outbreak and
response

7 April 2021

Dear Sir or Madam,

This seventeenth edition of the RSB COVID-19 bulletin highlights a selection of the bioscience research and news of the last month. It cannot be comprehensive and gives just a glimpse of the huge worldwide effort to understand SARS-CoV-2 and its effects.

We can all contribute to the response to COVID-19 by engaging with sound science, countering misinformation and increasing awareness. We hope this bulletin is helpful in this.

Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology; medical and government advice should be consulted regarding personal wellbeing decisions.

For further information and to get in touch, contact our policy team via: policy@rsb.org.uk.

To read previous editions and directly sign-up to future editions of this bulletin, please [visit this page](#).

This bulletin is divided into six main sections:

- 1. RSB news:** including key current updates from the RSB.
- 2. Research updates and expert opinion:** relevant national and international research news and outputs under topic headings.
- 3. How else can the bioscience community help?** Examples, resource and expertise calls.
- 4. Positive community news:** community impact aiding the pandemic response.
- 5. Other regularly updated information sources:** useful online information hubs.
- 6. Spotlight on personal and community wellbeing:** articles on mental health and wellbeing during self-isolation and social distancing.

This newsletter provides links to published news articles from a range of sources. Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology.

RSB news

The Biologist: Tracking viral variants and pandemic press coverage

In the latest COVID interviews from *The Biologist*, molecular epidemiologist Emma Hodcroft explains how **scientists are currently having to sample 'the ice-cube on top of the iceberg'**

when looking for significant SARS-CoV-2 variants; and the Science Media Centre's Fiona Fox **gives her view on how the press has handled the science of the COVID-19 pandemic**.

Education during COVID-19

Our education policy team is working with government, awarding bodies and policy partners to provide advice and support to teachers, parents and students. These pages will be updated regularly over the coming weeks.

Training

During the Covid-19 pandemic the RSB can offer training courses both online and in-person (via video conferencing). Training courses can also be delivered in-house to staff or students (via video conferencing). If you are interested in up-skilling then please contact us at training@rsb.org.uk. Visit our **online training platform myLearning** or send a request to sign-up to our **Training Newsletter** for regular updates.

For more current news, commentary and updates, visit the **RSB on Twitter, LinkedIn, The Biologist**, and read our latest edition of the weekly **Science Policy Newsletter**.

Research updates and expert opinion

SARS-CoV-2 is a virus in the zoonotic coronavirus family. This novel virus, discovered in 2019, was previously unidentified in humans and causes the disease COVID-19, which has since been characterized as a pandemic.

B.1.1.7 variant linked to 55% higher mortality compared to other strains of SARS-CoV-2

The B.1.1.7 variant is very likely to cause more severe illness than pre-existing SARS-CoV-2 variants, according to new research published in Nature, reports the LSHTM.

Multitude of coronavirus variants found in the US - but the threat is unclear

Ramped-up sequencing efforts are helping to identify mutations that might boost transmission or help a virus evade immune responses, reports Nature News.

Study identifies key features in SARS-CoV-2 genome essential for replication in respiratory cells

Researchers at the Institute of Medical Virology, the University of Zurich in Switzerland, have identified features in the SARS-CoV-2 genome that are important for human respiratory cell growth, reports News Medical.

Coronavirus: 'Double mutant' Covid variant found in India

A new 'double mutant' variant of the coronavirus has been detected from samples collected in India, reports the BBC.

WHO calls for further studies, data on origin of SARS-CoV-2 virus, reiterates that all hypotheses remain open.

The report of the international team on their Wuhan field visit, from 14 January - 10 February 2021, was published as WHO Director-General Dr Tedros Adhanom Ghebreyesus called for further studies.

COVID-19 pathophysiology

Post-acute COVID-19 syndrome

Nature Medicine has published a review article where authors provide a comprehensive review of the current literature on post-acute COVID-19, its pathophysiology and its organ-specific sequelae. They discuss relevant considerations for the multidisciplinary care of COVID-19 survivors and propose a framework for the identification of those at high risk of post-acute COVID-19 and their coordinated management through dedicated COVID-19 clinics.

Long Covid: More than a million affected in February, survey suggests

BBC News reports about one in five people have symptoms of long Covid five weeks after an initial infection and one in seven after 12 weeks, as suggested by an Office of National Statistics (ONS) survey.

Four in five patients with COVID-19 have persistent symptoms

According to results released by the Post-hospitalisation COVID-19 (PHOSP-COVID) study, jointly funded by UK Research and Innovation and the National Institute for Health Research (NIHR), patients continued to experience negative impacts on their physical and mental health, as well as ability to work. Furthermore, at least a fifth of the participant population reached the threshold for a new disability.

Gum disease linked to COVID-19 complications

A study published in the Journal of Clinical Periodontology has found that people with advanced gum disease are much more likely to suffer complications from coronavirus, including being more likely to require a ventilator and to die from the disease, reports British Dental Journal.

Important inflammatory markers identified in COVID-19

UKRI-supported ISARIC, with the UK-CIC, has identified new biomarkers of inflammation that indicate the severity of COVID-19 and distinguish it from severe influenza.

COVID-19: Hearing loss, tinnitus and vertigo may be associated with coronavirus, research suggests

Scientists estimate nearly 15% of people with the virus suffered tinnitus and nearly 8% suffered hearing loss, reports Sky News.

The spatial landscape of lung pathology during COVID-19 progression

Authors of an accelerated article preview published by Nature provide evidence that SARS-CoV-2 infects predominantly alveolar epithelial cells and induces a localized hyper-inflammatory cell state associated with lung damage. They suggest that this spatial single-cell landscape enabled the pathophysiological characterization of the human lung from its macroscopic presentation to the single-cell, providing an important basis for the understanding of COVID-19, and lung pathology in general.

Epidemiology and public health response

Scandal over COVID vaccine trial at Peruvian universities prompts outrage

A clinical trial of COVID-19 vaccines in Peru has sparked outrage and triggered a series of high-profile resignations at universities and in government as researchers gave shots to politicians and family members, violating trial regulations and damaging public trust, reports Nature News.

The Potential Future of the COVID-19 Pandemic. Will SARS-CoV-2 Become a Recurrent Seasonal Infection?

A viewpoint article published online in the Journal of the American Medical Association discusses

the future of the pandemic and suggests that the public and health systems need to plan for the possibility that COVID-19 will persist and become a recurrent seasonal disease.

School staff with COVID-19 antibodies similar to other working age adults in local community

Teachers and other school staff show similar levels of antibodies for the COVID-19 virus as other working age adults, according to data collected by the Schools Infection Survey during the Autumn term, reports The London School of Hygiene and Tropical Medicine.

Rare COVID reactions might hold key to variant-proof vaccines

Some people mount an immune response able to fend off a menagerie of coronavirus variants, reports Nature News.

Government failing BAME communities and young women on vaccine take-up

A letter from the Women and Equalities Committee has criticised the Government for failing BAME communities and young women on vaccine take-up. Committee Chair Caroline Nokes warned that leaving these issues unaddressed could be 'devastating for both vaccine hesitant groups and wider society.'

Committee publishes letter from Michael Gove on Covid-19 vaccine certificates

The Public Administration and Constitutional Affairs Committee has published correspondence from Michael Gove setting out the Government's plans for a review of the efficacy of 'Covid-19 vaccine certificates' (or vaccine passports).

Why we need to share vaccine doses now and why COVAX is the right way to do it

An explainer article from Wellcome describes how vaccines are now starting to reach countries across the globe through the COVAX initiative, set up to promote equitable access to vaccines worldwide. However, the vast majority of doses administered so far, nearly 80%, have been in just 10 countries.

Covid-19: Mexico revises coronavirus death toll up by 60%

Mexico has published revised figures indicating that the number of deaths caused by coronavirus is 60% higher than previously reported, reports The BBC.

New research highlights risks of separating newborns from mothers during COVID-19 pandemic

New research from WHO and partners shows that the COVID-19 pandemic is severely affecting the quality of care given to small and sick newborns, resulting in unnecessary suffering and deaths.

Covid: Will your pet need a coronavirus vaccine?

Scientists are developing Covid-19 vaccines that are specially designed for animals. Russia has announced it has registered what it said was the world's first animal-specific jab. BBC News covers expert opinion on the topic.

Testing and ongoing surveillance

Covid: Half of UK has antibodies from vaccination or infection

Roughly half of people in the UK now have antibodies against Covid, either through infection or vaccination, tests conducted by the Office for National Statistics (ONS) show, reports The BBC.

UK start-ups collaborate in the fight against COVID-19

Two biotech start-ups at Daresbury Laboratory have developed a new type of COVID-19 testing platform that is rapid, low cost and easy to use, reports UKRI news.

Mapping the next stage of the COVID-19 Infection Survey

The Coronavirus (COVID-19) Infection Survey (CIS) has cemented itself as a vital source of information on the state of the pandemic in the UK. With the advent of vaccines and a roadmap out of restriction, Deputy Director for the COVID-19 Infection Survey Tina Thomas explains how the scope of the survey is expanding to report on the effectiveness of vaccine programmes and pays tribute to all those who have taken it this far.

Prophylaxis and treatment

Vet science 'being ignored' in quest for COVID-19 drug

US expert on feline coronavirus says research "is far more advanced in veterinary than human medicine, but they do not recognise any animal coronavirus diseases of veterinary importance as models", reports VetTimes.

Novavax vaccine 96% effective against original coronavirus, 86% vs British variant in UK trial

Novavax Inc's COVID-19 vaccine was 96% effective in preventing cases caused by the original version of the coronavirus in a late-stage trial conducted in the United Kingdom, moving it a step closer to regulatory approval, reports Reuters.

What it will take to vaccinate the world against COVID-19

Nature News Explainer published a special report outlining the challenges of vaccinating the world against COVID-19, from unleashing the power of mRNA vaccines, to the battle for temporary intellectual-property relief.

An interactive website tracking COVID-19 vaccine development

Published online for The Lancet, authors describe their online, interactive vaccine tracker hosted by the Vaccine Centre (VaC) at the London School of Hygiene and Tropical Medicine (LSHTM; London, UK). This tracker aims to collate up-to-date information on all COVID-19 vaccine candidates from inception through to deployment, enabling policy makers, researchers, and the public to keep informed of the rapid developments.

Feelings towards COVID-19 vaccination in Africa

A survey by the Africa Centres for Disease Control and Prevention (Africa CDC) and London School of Hygiene & Tropical Medicine (LSHTM) on confidence about being vaccinated against COVID-19 in 15 African countries indicates that work on communication around vaccines is needed, reports The Lancet.

University scientists deconstruct Covid-19 vaccines and publish 'recipe' on open web

Stanford University scientists have determined the sequences of Pfizer and Moderna vaccines from vials set to be discarded and published the mRNA sequences on Github, the online repository for software code, reports The Guardian.

Covid: No vaccine blood clot cases in Wales, study finds

No cases of blood clots have been found in more than 440,000 people who have been vaccinated against coronavirus in Wales, a study has shown, reports The BBC.

New study finds strong immune response following COVID-19 vaccination

Study led by Sheffield and Oxford Universities finds that 99% of people have robust immune response against COVID-19 after one dose of Pfizer vaccine, reports UK Department of Health and Social Care.

The UK's randomised coronavirus trials are a global success story

For more than a year the Randomised Evaluation of Covid-19 Therapy (Recovery) programme has used the NHS to test many Covid treatments, saving lives worldwide, reports The Guardian.

WHO adds Janssen vaccine to list of safe and effective emergency tools against COVID-19

The World Health Organization (WHO) today listed the COVID-19 vaccine Ad26.COV2.S, developed by Janssen (Johnson & Johnson), for emergency use in all countries and for COVAX roll-out.

BBC reports: 'Covid jab probably does protect those around you'

The Covid-19 vaccine blocks pretty much all cases of serious illness, but the UK government has been much more cautious about saying whether it stops people carrying the virus and infecting others, reports the BBC.

MHRA research and analysis: Coronavirus vaccine - weekly summary of Yellow Card reporting

This report covers the period 9 December 2020 to 21 March 2021.

How else can the bioscience community help?

COVID-19 resources from the community

An RSB webpage with links to COVID-19 initiatives and resources available from other bioscience organisations and the wider community. This page is being updated regularly and if you would like to suggest additional content please [send us an email](#).

Coronavirus restrictions: what you can and cannot do

Coronavirus remains a serious threat across the country. Find out what you can and cannot do.

What's the roadmap for lifting lockdown?

The opening of pub gardens and non-essential shops can go ahead on 12 April, the government has confirmed.

New free vaccination learning tools for schools

The new resource for schools produced by The London School of Hygiene & Tropical Medicine's (LSHTM) Vaccine Confidence Project and the Stephen Hawking Foundation aims to tackle misinformation and conspiracy theories around vaccines, and educate children about immunisation programmes.

Has Covid-19 changed researcher behaviour?

An opinion piece for Wellcome explores researcher behaviour during the pandemic by asking if the research community has done enough to share their data openly and transparently? And will these commitments lead to a collaborative and transparent research culture?

Rules for PhD funding relaxed for those affected by the pandemic

UK Research and Innovation (UKRI) has confirmed further action to support doctoral students affected by the COVID-19 pandemic.

The WHO is fighting misinformation about Coronavirus using shareable content

Viral Facts Africa is a World Health Organisation-led initiative that aims to debunk rumours in Africa surrounding the covid pandemic and fill the information gaps where misinformation may thrive. You can get video and graphics with facts about the pandemic on your phone and elsewhere, reports The BBC.

Invitation from the Valuing Nature Network to participate in a study on the impacts of COVID-19 on human wellbeing and interactions with coastal nature

If you live in or near coastal areas Valuing Nature Network invites you to participate in a research study exploring the impacts of COVID-19 on people's wellbeing and interactions with coastal nature, by completing an anonymous survey and forwarding it to others living in or near coastal areas.

Contact RSB to discuss bioscience community issues or actions via policy@rsb.org.uk

Positive community news

Vaccines are making some long Covid sufferers feel better

After months of recurring symptoms, some long Covid patients are reporting that their symptoms ease after getting a jab, reports Wired.

Innovation will boost south-west England's post-COVID economy

The south-west's pioneering businesses are crucial to helping the area, and the whole country, to recover from the economic impact of COVID-19, reports UKRI.

Other regularly updated information sources

Additional COVID-19 resources

An RSB webpage collating other regularly updated resources on COVID-19.

[WHO] Coronavirus disease (COVID-19) Situation Dashboard

WHO COVID-19 situation dashboard.

Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE

COVID-19 case dashboard.

Global.health open repository and visualisation platform

An international database tracking anonymised information about individual COVID-19 cases.

Spotlight on personal and community wellbeing

Nursing Times survey reveals state of nurses' mental health one year into pandemic

Almost two-thirds of nurses feel their mental health has deteriorated since the initial peak of the pandemic last spring and that national wellbeing support is still not good enough, reveals a survey by Nursing Times.

COVID-19: Social prescriptions for health and wellbeing to play key role in post-coronavirus recovery

Social prescriptions, also known as community referrals, will play a key role in the recovery post-COVID-19, reports Sky News.

The pandemic has been tough on young people - which is why summer break is so important for their mental health

Writing for the Conversation, Siobhan O'Neill, Professor of Mental Health Sciences, Ulster University explores the importance of giving children and young people time away from school, time to be active and creative and why this important for their mental health.



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